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10/634,876	08/06/2003	Hideki Iwata	1713.1008	8217

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EXAMINER	
ROJAS, BERNARD	
ART UNIT	PAPER NUMBER
2832	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/634,876	IWATA ET AL.	
	Examiner	Art Unit	
	BERNARD ROJAS	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-8,10,11,15,18,22,24,27,30-38,40,43,44,46 and 68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-11,15,18,22,24,27,30-38,40 and 68* is/are rejected.

7)☒ Claim(s) *43,44 and 46* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments, filed 09/17/2007, with respect to the rejection(s) of the pending claims under U.S.C. 102(e) and U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the previously applied art of Seki et al. [US 6,734,513] in conjunction with newly cited Asada et al. [US 5,872,496].

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8, 11, 22, 40 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. [US 6,734,513] in view of Asada et al. [US 5,872,496].

Claim 68, Seki et al. discloses a micro-relay comprising: a first substrate [10] having a contact [14b, 15b] as a stationary contact and an electrode [11] as a stationary electrode; a second substrate [40] facing the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate including: a frame [30] sandwiched between the first and second substrates forming a hermetical sealed structure [Fig. 4, col. 6 lines 16-20] a portion having an electrode as a movable electrode [24] facing the stationary electrode, and a contact [28] as a movable contact facing the stationary contact, and a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates.

Seki et al. fails to teach that the portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Claim 8, Seki et al. discloses the micro-relay as claimed in claim 68, wherein interconnection lines extending from the first substrate to an outside of the micro-relay are flush with a surface of the first substrate [Fig. 4].

Claim 11, Seki et al. discloses the micro-relay as claimed in claim 68, wherein the movable portion is coupled to the frame by hinge springs arranged symmetrically [23, Fig. 3].

Claim 15, Seki et al. discloses a micro-relay comprising: a first substrate [10] having stationary contacts [14b, 15b] and a stationary electrode [11]; a second substrate [40] arranged so as to face the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate having a frame [22, 30] frame sandwiched between the first and second substrates to realize a hermetical sealed structure [Fig. 4, col. 6 line 16-20], a movable portion and

and a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates, the movable portion having a movable electrode [24] facing the stationary electrode, and a movable contact [28] facing the stationary contacts, the movable portion moving between the first and second substrates due to electrostatic attraction that develops between the movable electrode and the stationary electrode [Col. 6, lines 35-45] wherein the frame has a portion [22] that restricts in-plane movement of the movable portion.

Seki et al. fails to teach that the portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the

movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Claim 22, Seki et al. discloses the micro-relay as claimed in claim 68, wherein the second substrate has a flat plate shape [Fig. 4].

Claim 40, Seki et al. discloses the micro-relay as claimed in claim 68, wherein the frame has a thickness that defines spaces between the movable plate and the first stationary contact and between the movable plate and the second stationary contact [Fig. 4].

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. [US 6,734,513], as applied to claim 68 above, and further in view of Hyman et al. [US 6,504,118].

Claims 6 and 7, Seki et al. discloses the claimed invention with the exception of using through holes in the substrate to interconnect the electrodes and the contacts outside of the micro-relay.

Hyman et al. teaches providing through holes in the substrate to interconnect the electrodes and the contacts outside of the micro-relay [figures 2a and 3a].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to provide for the interconnecting of elements through the substrate as shown by Hyman et al. in order to facilitate connecting the elements by using exterior terminals {Hyman et al. figures 2a and 3a].

Claims 1, 5, 8-11, 18, 22, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. [US 6,734,513] in view of Asada et al. [US 5,872,496] and in further view of DeReus [US 6,876,482].

Claim 1, Seki et al. discloses a micro-relay comprising: a first substrate [10] having stationary contacts [14b, 15b] and a stationary electrode [11]; a second substrate [40] arranged so as to face the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate having a frame [22, 30] sandwiched between the first and second substrates to realize a hermetical sealed structure [Fig. 4, col. 6 lines 16-20], a movable portion and

a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates and a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates, the movable portion having a movable electrode [24] facing the stationary electrode, and a movable contact [28] facing the stationary contacts, the movable portion moving between the first and second substrates due to electrostatic attraction that develops between the movable electrode and the stationary electrode [Col. 6, lines 35-45].

Seki et al. fails to teach that the movable portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Seki et al. in view of Asada et al. fails to teach that the movable portion has multiple contacts and the stationary contacts have branch portions contactable to the multiple movable contacts.

DeReus teaches a Mem switch [figure 7] with a movable contact portion [714] with multiple contacts [720, 722] that contact the stationary contact branch portions [716, 718].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the contact configuration of DeReus in the micro switch of Seki et al. in order to reduce the gap distance between movable contacts and stationary contacts, thus reducing the potential for shorting between actuation electrodes; insure reliable contact with stationary contacts because without contact bumps there is a potential for interference between movable contact and the substrate between stationary contact; and to provide design flexibility to meet contact resistance and current capacity requirements [col. 15 line 60 to col. 16 line 10].

Claim 5, DeReus teaches the micro-relay according to claim 1, wherein the stationary contacts [716, 718] that are contactable to multiple contacts [720, 722] are provided independently [figure 7].

Claim 18, Seki et al. discloses a micro-relay comprising: a first substrate [10] having stationary contacts [14b, 15b] and a stationary electrode [11]; a second substrate [40] arranged so as to face the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate having a frame [22, 30] sandwiched between the first and second substrates to realize a hermetical sealed structure [Fig. 4, col. 6 lines 16-20], a movable portion and a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates; the movable portion having a movable electrode [24] facing the stationary electrode, and a movable contact [28] facing the stationary contacts, the movable portion moving between the first and second substrates due to electrostatic attraction that develops between the movable electrode and the stationary electrode [col. 6, lines 35-45].

Seki et al. fails to teach that the portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Seki et al. in view of Asada et al. fails to teach that the movable portion has protrusions that prevent the movable portion from sticking to the first substrate.

DeReus teaches a Mem switch [figure 7] with a movable portion [704] with protrusions [726, 728] that prevent the movable portion from sticking to the first substrate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the contact configuration of DeReus in the micro switch of Seki et al. in order to prevent to movable electrode from contacting the stationary electrode [col. 16 lines 60-65].

Claims 24, 27, 30-35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. [US 6,734,513] in view of Asada et al. [US 5,872,496] and in further view of Hyman et al. [US 6,504,118].

Claims 24, 27 and 30, Seki et al. discloses a micro-relay comprising: a first substrate [10] having stationary contacts [14b, 15b] and a stationary electrode [11]; a second substrate [40] arranged so as to face the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate having a frame [22, 30] sandwiched between the first and second substrates to realize a hermetical sealed structure [Fig. 4, col. 6 lines 16-20], a movable portion and a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates; the movable portion having a movable electrode [24] facing the stationary electrode, and a movable contact [28] facing the stationary contacts, the movable portion moving between the first and second substrates due to electrostatic attraction that develops between the movable electrode and the stationary electrode [col. 6, lines 35-45].

Seki et al. fails to teach that the portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Seki et al. in view of Asada et al. fails to teach that the second substrate has a stationary electrode facing the movable contact and a stationary contact that faces the moveable electrode.

Hyman et al. teaches a Mem switch [figures 5a, 5b and 5c] that has a base substrate [102] with a base electrode [117], movable portion [124] with movable contacts [120, 137] and a cover substrate [134] with a cover electrode [144]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switch Seki et al. to include an electrode and a contact on the second substrate in order to create a two way microswitch switch as shown by Hyman et al.

Claims 31, 32 and 33, Seki et al. discloses a micro-relay comprising: a first substrate [10] having stationary contacts [14b, 15b] and a stationary electrode [11]; a second substrate [40] arranged so as to face the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate having a

frame [22, 30] sandwiched between the first and second substrates to realize a hermetical sealed structure [Fig. 4, col. 6 lines 16-20], a movable portion and a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates; the movable portion having a movable electrode [24] facing the stationary electrode, and a movable contact [28] facing the stationary contacts, the contacts are used to transmit electrical signals, the movable portion moving between the first and second substrates due to electrostatic attraction that develops between the movable electrode and the stationary electrode [Col. 6, lines 35-45].

Seki et al. fails to teach that the portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Seki et al. in view of Asada et al. fails to teach that the second substrate has a stationary electrode facing the movable contact and a stationary contact that faces the moveable electrode; and the movable contact is separated from the stationary contact of the first and second substrates in the absence of electrostatic attraction.

Hyman et al. teaches a Mem switch [figures 5a, 5b and 5c] that has a base substrate [102] with a base electrode [117], movable portion [124] with movable contacts [120, 137] and a cover substrate [134] with a cover electrode [144], wherein the movable contact is separated from the stationary contact of the first and second substrates in the absence of electrostatic attraction [figure 5a] and the movable contact is brought into contact with the stationary contact of the second electrode of the second substrate [figure 5c] or the stationary contact of the first substrate [figure 5b] due the electrostatic attraction.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switch Seki et al. to include an electrode and a contact on the second substrate in order to create a normally open two way microswitch switch as shown by Hyman et al.

Claim 34, Seki et al. discloses a micro-relay comprising: a first substrate [10] having stationary contacts [14b, 15b] and a stationary electrode [11]; a second substrate [40] arranged so as to face the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate having a frame [22, 30] sandwiched between the first and second substrates to realize a hermetical sealed structure [Fig. 4, col. 6 lines 16-20], a movable portion and a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates; the movable portion having a movable electrode [24] facing the stationary electrode, and a movable contact [28] facing the stationary contacts, the movable portion moving between the first and second substrates due to

electrostatic attraction that develops between the movable electrode and the stationary electrode [col. 6, lines 35-45].

Seki et al. fails to teach that the portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Seki et al. in view of Asada et al. fails to teach that the second substrate has a stationary electrode facing the movable contact.

Hyman et al. teaches a Mem switch [figures 5a, 5b and 5c] that has a base substrate [102] with a base electrode [117], movable portion [124] with movable contacts [120, 137] and a cover substrate [134] with a cover electrode [144], wherein the movable contact is separated from the stationary contact of the first and second substrates in the absence of electrostatic attraction [figure 5a] and the movable contact is brought into contact with the stationary contact of the second electrode of the second substrate [figure 5c] Or the stationary contact of the first substrate [figure 5b] due the electrostatic attraction.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switch Seki et al. to include an electrode and a

contact on the second substrate in order to create a normally open two way microswitch switch as shown by Hyman et al.

Claim 35, Seki et al. discloses a micro-relay comprising: a first substrate [10] having stationary contacts [14b, 15b] and a stationary electrode [11]; a second substrate [40] arranged so as to face the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate having a frame [22, 30] sandwiched between the first and second substrates to realize a hermetical sealed structure [Fig. 4, col. 6 lines 16-20], a movable portion and a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates; the movable portion having a movable electrode [24] facing the stationary electrode, and a movable contact [28] facing the stationary contacts, the movable portion moving between the first and second substrates due to electrostatic attraction that develops between the movable electrode and the stationary electrode [col. 6, lines 35-45].

Seki et al. fails to teach that the portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Seki et al. in view of Asada et al. fails to teach that the second substrate has a stationary electrode, and an interconnection line extending from the stationary electrode is extracted to an outside of the second substrate via a through hole formed in the second substrate.

Hyman et al. teaches a Mem switch [figures 5a, 5b and 5c] that has a base substrate [102] with a base electrode [117], movable portion [124] with movable contacts [120, 137] and a cover substrate [134] with a cover electrode [144], wherein an interconnection line extending from the stationary electrode is extracted to an outside of the second substrate via a through hole formed in the second substrate [figure 3a].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switch Seki et al. to include an electrode and a contact on the second substrate in order to create a normally open two way microswitch switch as shown by Hyman et al.

Claim 36, Seki et al. discloses a micro-relay comprising: a first substrate [10] having stationary contacts [14b, 15b] and a stationary electrode [11]; a second substrate [40] arranged so as to face the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate having a frame [22, 30] sandwiched between the first and second substrates to realize a hermetical sealed structure [Fig. 4, col. 6 lines 16-20], a movable portion and a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates; the movable portion having a movable electrode [24] facing the stationary electrode, and a movable contact [28] facing the stationary

contacts, the movable portion moving between the first and second substrates due to electrostatic attraction that develops between the movable electrode and the stationary electrode [col. 6, lines 35-45].

Seki et al. fails to teach that the portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Seki et al. in view of Asada et al. fails to teach that the second substrate has a stationary contact that faces the moveable electrode; and wherein an interconnection line extending from the stationary contact is extracted to an outside of the second substrate via a through hole formed in the second substrate.

Hyman et al. teaches a Mem switch [figures 5a, 5b and 5c] that has a base substrate [102] with a base electrode [117], movable portion [124] with movable contacts [120, 137] and a cover substrate [134] with a cover electrode [144], wherein an interconnection line extending from the stationary contact is extracted to an outside of the second substrate via a through hole [140] formed in the second substrate [figure 2a].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switch Seki et al. to include an electrode and a contact on the second substrate in order to create a normally open two way microswitch switch as shown by Hyman et al.

Claims 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. [US 6,734,513] in view of Asada et al. [US 5,872,496], and in view of DeReus [US 6,876,482], and in further view of Hyman et al. [US 6,504,118].

Claims 37 and 38, Seki et al. discloses a micro-relay comprising: a first substrate [10] having stationary contacts [14b, 15b] and a stationary electrode [11]; a second substrate [40] arranged so as to face the first substrate; and a movable plate [20] arranged between the first and second substrates, the movable plate having a frame [22, 23, 30] and a movable portion, the frame being sandwiched between the first and second substrates to realize a hermetical sealed structure [Fig. 4], a plurality of hinge springs [23] movingly suspending the portion while maintaining a parallel state relative to the first and second substrates; the movable portion having a movable electrode [24] facing the stationary electrode, and a movable contact [28] facing the stationary contacts, the movable portion moving between the first and second substrates due to electrostatic attraction that develops between the movable electrode and the stationary electrode [Col. 6, lines 35-45].

Seki et al. fails to teach that the portion is suspended from the frame via the hinge springs.

Asada et al. teaches a micro-relay [figure 2], with a substrate [4] a frame [2] and a cover [3] wherein the movable plate [5] is suspended from the frame via hinges [6].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the micro-relay of Seki et al. in order to suspend the movable plate from the frame sandwiched between the two substrates as shown by Asada et al. since this alternate arrangement was known in the art.

Seki et al. in view of Asada et al. fails to teach that the second substrate has a stationary contact that faces the moveable electrode.

Hyman et al. teaches a Mem switch [figures 5a, 5b and 5c] that has a base substrate [102] with a base electrode [117], movable portion [124] with movable contacts [120, 137] and a cover substrate [134] with a cover electrode [144]
It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switch Seki et al. to include an electrode and a contact on the second substrate in order to create a two way microswitch switch as shown by Hyman et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switch Seki et al. to include an electrode and a contact on the second substrate in order to create a normally open two way microswitch switch as shown by Hyman et al.

Seki et al. in view of Asada et al. and in further view of Hyman et al also fails to teach that the movable portion has protrusions that prevent the movable portion from sticking to the first substrate.

DeReus teaches a Mem switch [figure 7] with a movable portion [704] with protrusions [726, 728] that prevent the movable portion from sticking to the first substrate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the contact configuration of DeReus in the micro switch of Seki et al. in order to prevent to movable electrode from contacting the stationary electrode [col. 16 lines 60-65].

Allowable Subject Matter

Claims 43, 44, 46 are allowed.

Response to Arguments

Applicant's arguments filed 02/04/2008 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the movable portion maintains a parallel state between the first and second substrates) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claim merely requires that the plurality of hinges movingly suspend the movable portion while maintaining a parallel state relative to the first and second substrates. The claim

language does not require the movable portion be parallel to the first and second substrates during transit of the switching operation caused by the electrostatic actuators.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BERNARD ROJAS whose telephone number is (571)272-1998. The examiner can normally be reached on M and W-F, 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elvin G Enad/

Supervisory Patent Examiner, Art Unit 2832

Br

/Bernard Rojas/

Examiner, Art Unit 2832